PROPOSED

Temporary Covered Source Permit (CSP) No. 0660-01-CT Review
Application Nos. 0660-03, 0660-04

APPLICANT:	Goodfellow Brothers, Inc.
RESPONSIBLE OFFICIAL:/POC	Ms. Amy Sands Crusher Administrator (808) 839-7202
INITIAL LOCATION	UTM Coordinates (Zone 4) 592,384 Meters East 2,358,002 Meters North Campbell Industrial Park Kapolei, HI 966707
MAILING ADDRESS	P.O. Box 220 Kihei, HI 96753
CONSULTANT	J.W. Morrow 1481 South King Street, Suite 548 Honolulu, HI 96814 (808) 942-9096
SIC	1429

PROPOSED PROJECT:

Application 0660-03 is for a permit renewal. The only change requested in the renewal application is to remove the 265 ton per hour (tph) mobile crusher from the permitted equipment list. No other changes have been proposed to the existing permit.

Application 0660-04 is for a minor permit modification, and seeks to replace the existing 400 ton per hour (TPH) mobile jaw crusher, (K-149) with an identical mobile jaw crusher (K-148). Unit K-148 is currently permitted under CSP 0242-01-CT. Upon issuance of this permit, Unit K-148 will be removed from the equipment list for CSP 0242-01-CT. The newly added unit will also be subject to an annual operating restriction of 2,080 hours in any rolling twelve-month (12-month) period.

The equipment is fueled with fuel oil no. 2 with a sulfur content of 0.5% by weight. The Standard Industrial Classification Code (SICC) for this facility is 1429 - Crushed and Broken Stone, Not Elsewhere Classified.

Equipment to be removed:

1. 265 TPH Komatsu BR 380 JG-1 mobile jaw crusher, s/n 1381; with 192 HP Komatsu diesel engine (model no. SAA6D102E-2, s/n 26394576), 9.9 gallons per hour; and

2. 400 TPH Nordberg LT-105 mobile jaw crusher with 300 hp Caterpillar diesel engine Model C9, Unit fired with diesel fuel no. 2, 15 gallons per hour. Equipment no. K-149.

Equipment to be added:

1. 400 TPH Mobile Jaw Crusher, Nordberg model no. LT105, serial no. 72816, with 300 HP Caterpillar diesel engine, model no. C-9 DITA, serial no. CLJ07851, fired with diesel fuel no. 2, 15 gallons per hour, equipment no. K-148.

Air Pollution Controls:

Air pollution control for each portable jaw crusher consists of a water spray nozzle located at the main conveyor belt. Therefore, a control efficiency of 70% will be credited to the emission points after the material has been crushed.

APPLICABLE REQUIREMENTS:

Hawaii Administrative Rules (HAR) Title 11 Chapter 59
Hawaii Administrative Rules (HAR) Title 11 Chapter 60.1
- Subchapter 1 - General Requirements
- Subchapter 2 - General Prohibitions
  - 11-60.1-31 Applicability
  - 11-60.1-32 Visible Emissions
  - 11-60.1-33 Fugitive Dust
  - 11-60.1-38 Sulfur Oxides from Fuel Combustion
- Subchapter 5 - Covered Sources
- Subchapter 6 - Fees for Covered Sources,
  - 11-60.1-111 Definitions
  - 11-60.1-112 General fee provisions for covered sources
  - 11-60.1-113 Application fees for covered sources
  - 11-60.1-114 Annual fees for covered sources
  - 11-60.1-115 Basis of annual fees for covered sources
- Subchapter 8 - Standards of Performance for Stationary Sources
  - 11-60.1-161 New Source Performance Standards
- Subchapter 10 - Field Citations

FEDERAL REQUIREMENTS

40 Code of Federal Regulations (CFR) Part 60 Subpart OOO - *Standards of Performance for Nonmetallic Mineral Processing Plants* is applicable to both mobile crushing units since the manufacture date of the each mobile crushing unit is after August 1983 and each mobile crushing unit has a maximum capacity greater than 150 TPH. The standard includes stricter visible emissions requirements and annual source testing to verify compliance with the stricter requirements.

NON-APPLICABLE REQUIREMENTS:

40 CFR Part 60 Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

Subpart IIII is not an applicable requirement pursuant to 40 CFR §60.4200, which states:

"The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines…"

The diesel engine is not considered to be stationary because it will not remain in a single location on a permanent basis, as indicated by the temporary covered source permit. Therefore the diesel engines are not subject to New Source Performance Standards for Stationary Compression Reciprocating Internal Combustion Engines.

40 CFR Part 63 Subpart ZZZZ – *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

The diesel engines are not subject to 40 CFR 63 Subpart ZZZZ due to the fact that they are nonroad engines. Nonroad engines are exempt from NESHAPS regulation pursuant to 40 CFR §63.6585, which states:

"A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differs from mobile RICE in that a stationary RICE is not a non-road engine as defined in 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition."

Pursuant to 40 CFR §1068.30 a non-road engine is defined as:

"Nonroad engine means:

(1) Except as discussed in paragraph (2) of this definition, a nonroad engine is an internal combustion engine that meets any of the following criteria:

(i) It is (or will be) used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers);
(ii) It is (or will be) used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); and
(iii) By itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

(2) An internal combustion engine is not a nonroad engine if it meets any of the following criteria:

(i) The engine is used to propel a motor vehicle, an aircraft, or equipment used solely for competition;
(ii) The engine is regulated under 40 CFR Part 60, (or otherwise regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act (42 U.S.C. 7411)); and
(iii) The engine otherwise included in paragraph (1)(iii) of this definition remains or will remain at a location for more than twelve (12) consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two (2)

years) and that operates at that single location approximately three (3) months (or more) each year. See §1068.31 for provisions that apply if the engine is removed from the location."

The engine is portable or transportable, is not used to propel a motor vehicle, an aircraft, or equipment used solely for competition, is not regulated under 40 CFR 60, and will not remain at a location for more than twelve (12) consecutive months.

40 CFR Part 61 - National Emission Standard for Hazardous Air Pollutants (NESHAPS) is not an applicable requirement because the facility does not emit hazardous air pollutants in excess of the 25 TPY total HAP or 10 TPY individual HAP major source triggering levels.

Prevention of Significant Deterioration (PSD):
PSD is not an applicable requirement because the facility is not a major stationary source of air pollution (criteria air pollutant ≥ 100 TPY for listed sources or ≥ 250 TPY for all other sources), with the exception of CO_2. CO_2 emissions are addressed pursuant to the Greenhouse Gas Tailoring Rule.

Greenhouse Gas Tailoring Rule (GGTR):
Due to the fact the greenhouse gas emissions is now classified as a regulated pollutant, the GGTR was promulgated. The GGTR "tailors" the applicability threshold for PSD and Title V permit programs to:

- ≥ 100,000 tons/yr of potential CO_2e emissions for the PSD/Title V Major Source level, and
- ≥ 75,000 tons/yr of potential CO_2e emissions for the PSD/Title V significance level.

The CO_2e emissions from the facility are less than the triggering level and are summarized in the following table:

Pollutant	CO2e (MTPY)	CO2e (TPY)
CO_2	318.44	351.02
CH4	0.27	0.30
N2O	0.80	0.88
Total	319.51	352.20

Compliance Assurance Monitoring (CAM) is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 CFR Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are greater than the major source level [>100 tpy]; and (5) not otherwise be exempt from CAM. CAM is not applicable to the facility because it is not a major source.

Annual Emissions Reporting Requirement (AERR) is not applicable because emissions from the facility are less than reporting levels pursuant to 40 CFR 51, Subpart A (see **Table 1**).

Table 1 - AERR & BACT Comparison

Pollutant	Facility Emissions (tpy)	Continuous Emissions (tpy)[a]	AERR Triggering Levels (tpy)		BACT Significant Levels (tpy)
			1-yr Reporting Cycle (Type A Sources)	3-yr Reporting Cycle (Type B Sources)	
VOC	0.16	0.66	≥ 250	≥ 100	≥40
PM_{10}	9.56	40.26	≥ 250	≥ 100	≥15
NO_x	4.11	17.30	≥ 2,500	≥ 100	≥40
SO_x	1.09	4.60	≥ 2,500	≥ 100	≥40
CO	0.66	2.76	≥ 2,500	≥ 1,000	≥100
HAPs (total)	0.17	0.70	n/a	n/a	≥5

[a] Emissions @ 8,760 hours per year.

Synthetic Minor Applicability
The facility is not a synthetic minor source because the facility does not exceed the 100 ton per year major source threshold for all pollutants other than CO_2 if operated continuously (8,760 hr/yr) at maximum capacity. Refer to table 1 for continuous emission estimates.

Insignificant Activities/Exemptions:
Insignificant activities listed in the application consist of one (1) diesel fuel tank with a 105.7 gallon capacity.

Alternative Operating Scenarios:
The existing permit contained.an alternate operating scenario for the replacement of a diesel engine that has been removed from the permit, so the scenario was removed for the permit renewal. No other alternate operating scenarios have been proposed.

Project Emissions:
Emissions from the two (2) mobile crushing units were determined using AP-42 emission factors. The AP-42 sections used included:

- §1.19.2, Crushed Stone Processing (8/04)
- §13.2.4, Aggregate handling and Storage Piles (11/06)
- §13.2.2, Unpaved Road (11/06)
- §3.3, Gasoline and Diesel Industrial Engines (10/96)

Criteria pollutant emission factors and fuel consumption data were provided by the manufacturer. A summary of the emissions from the permitted equipment is shown in the following table.

Pollutant	EMISSIONS			
	(lb/hr)	(g/s)	Max (TPY)	Limited (TPY)
SO_2				
New DEG	1.05	1.32E-01	4.60	1.09
TOTAL SO_2	***1.05***	***0.132***	***4.60***	***1.09***
NO_2				
New DEG	3.95	0.172	17.30	4.11
TOTAL NO_2	***3.95***	***0.172***	***17.30***	***4.11***
CO				
New DEG	0.63	0.079	2.76	0.66
TOTAL CO	***0.63***	***0.079***	***2.76***	***0.66***
VOC				
New DEG	0.15	0.019	0.66	0.16
TOTAL VOC	***0.15***	***0.019***	***0.66***	***0.16***
PM_{10}				
New DEG	0.06	0.008	0.26	0.06
New Crusher	2.21	0.278	9.67	2.30
Unpaved roads(new)	6.92	0.872	0.32	7.20
TOTAL PM_{10}	***9.19***	***1.16***	***40.26***	***9.56***

HAP emissions are:

Operational limit	2080	hours/yr
Max heat input, new	2.10	MMBtu/hr
Total heat input, all	2.10	MMBtu/hr

HAP	Emission Factor (lb/MMBtu)	EMISSIONS (lb/hr)	(g/s)	Max (TPY)	Limited (TPY)
Aldehydes	7.00E-02	1.47E-01	1.85E-02	6.44E-01	1.53E-01
BENZENE	9.33E-04	1.96E-03	2.47E-04	8.58E-03	2.04E-03
TOLUENE	4.09E-04	8.59E-04	1.08E-04	3.76E-03	8.93E-04
XYLENES	2.85E-04	5.99E-04	7.54E-05	2.62E-03	6.22E-04
PROPYLENE	2.58E-03	5.42E-03	6.83E-04	2.37E-02	5.63E-03
1,3-BUTADIENE	3.91E-05	8.21E-05	1.03E-05	3.60E-04	8.54E-05
FORMALDEHYDE	1.18E-03	2.48E-03	3.12E-04	1.09E-02	2.58E-03
ACETALDEHYDE	7.67E-04	1.61E-03	2.03E-04	7.05E-03	1.68E-03
ACROLEIN	9.25E-05	1.94E-04	2.45E-05	8.51E-04	2.02E-04
Total PAH	1.68E-04	3.53E-04	4.45E-05	1.55E-03	3.67E-04
			TOTAL	**0.70**	**0.17**

For detailed calculations, refer to the attached emissions spreadsheets.

Air Quality Assessment:
An ambient air quality analysis is not required for the permit renewal since no changes have been proposed to the existing permit. An analysis is not required for the minor modification because the existing mobile crusher and the new mobile crusher are identical units.

Other Issues:
None

Significant New Permit Conditions:
None

Conclusion and Recommendation:
The facility is in compliance with State and Federal laws, rules, regulations, and standards with regards to air pollution. Recommend issuance of temporary covered source permit renewal and modification.

Kevin Kihara
May 6, 2014